

Mackerel



Mackerel (*Scomber scombrus*) is a pelagic fish species that inhabits the North Sea where it is considered a native species. The mackerel is only very occasionally found in the Wadden

Sea, where it can almost exclusively be found in deep tidal inlets such as the Marsdiep (Couperus et al., 2016). Mackerel are part of the family of *Scombridae*, which also includes the subfamilies Tuna (*Scombrinae sp.*) and Hors mackerel (*Carangidae sp.*) (Ahmed et al., 2018). Mackerel exhibit schooling behavior, in which they migrate from place to place, while living a nomadic lifestyle (Ahmed et al., 2018).

History/ Population trends

The population size of Mackerel has seen major changes over the last century (Jansen, 2013). The largest observed change in mackerel abundance in the North Atlantic happened when the so-called “North Sea mackerel” collapsed due to overfishing (Jansen, 2013). Between the years 1993 and 2008 the total North Sea Mackerel population was fluctuating around and at the limit set by ICES (ICES, 2024). This near lose of the North Sea Mackerel population was almost entirely due to overfishing (Jansen, 2013). After more regulations were set in place, the population of mackerel improved to nearly four times the amount of stock as when the stock was endangered (ICES, 2024). However, this abundance of mackerel has been reduced significantly in the past 8 years (ICES, 2024). If the trends continue at their current pace, then the population will be back to the same numbers as they were in the 1990s (ICES, 2024).

Furthermore, accurate recruitment data are hard to come by and often disagreed upon (Jansen et al., 2014; ICES, 2024). Recruitment data are essential in the creation of advice for fisheries management (Jansen et al., 2014). From 2007 to 2011, the distribution of Atlantic mackerel has expanded north and west during the feeding months in the Norwegian Sea (Hughes et al., 2013). Nøttestad et al., hypothesized this to be a result of an increase in population size, new feeding opportunities and increased water temperatures (2015).

Miscellaneous

- Letourneur et al., has found that mackerel seem to remain smaller in both length and bodyweight compared to the 19th century (2023). The largest yearly caught mackerels used to have a length of almost 70cm and weigh more than 3kg, whereas this currently remains more around the 55cm mark and almost 2kg (Letourneur et al., 2023).

Diet

- Zooplankton (Cabral & Murta, 2002)
- Crustaceans (Cabral & Murta, 2002)
- Squid (Cabral & Murta, 2002)
- Herring (Cabral & Murta, 2002)
- Small fish (Cabral & Murta, 2002)

Sources

- Ahmed, Q., Bat, L., Öztekin, A., & Ali, Q. M. (2018). A review on studies of heavy metal determination in mackerel and tuna (Family-Scombridae) fishes. *Journal of Anatolian Environmental and Animal Sciences*, 3(3), 107–123.
<https://doi.org/10.35229/jaes.425382>
- Cabral, H. N., & Murta, A. G. (2002). The diet of blue whiting, hake, horse mackerel and mackerel off Portugal. *Journal of Applied Ichthyology*, 18(1), 14–23. <https://doi.org/10.1046/j.1439-0426.2002.00297.x>
- Couperus, B., Gastauer, S., Fässler, S. M., Tulp, I., Van Der Veer, H. W., & Poos, J. J. (2016). Abundance and tidal behaviour of pelagic fish in the gateway to the Wadden Sea. *Journal of Sea Research*, 109, 42–51.
<https://doi.org/10.1016/j.seares.2016.01.007>
- Hughes, K. M., Johnson, M., & Dransfield, L. (2013). A multivariate spatial analysis of Northeast Atlantic fish stocks over time [PhD masterscriptie, National Univeristy of Ireland, Department of Marine Environment]. In *NUI Galway*.
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=348c8f4fd538764307c6bbba85fee29af3c754e>
- Ices. (2024). Mackerel (*Scomber scombrus*) in subareas 1–8 and 14 and Division 9.a (the Northeast Atlantic and adjacent waters). *Figshare*.
<https://doi.org/10.17895/ices.advice.25019339.v1>
- Jansen, T. (2013). Pseudocollapse and rebuilding of North Sea mackerel (*Scomber scombrus*). *ICES Journal of Marine Science*, 71(2), 299–307.
<https://doi.org/10.1093/icesjms/fst148>
- Jansen, T., Kristensen, K., Van Der Kooij, J., Post, S., Campbell, A., Utne, K. R., Carrera, P., Jacobsen, J. A., Gudmundsdottir, A., Roel, B. A., & Hatfield, E. M. C. (2014). Nursery areas and recruitment variation of Northeast Atlantic mackerel (*Scomber*

scombrus). *ICES Journal of Marine Science*, 72(6), 1779–1789.

<https://doi.org/10.1093/icesjms/fsu186>

Letourneur, Y., Charpin, N., Mennesson, M. I., & Keith, P. (2023). Current knowledge of New Caledonian marine and freshwater ichthyofauna, SW Pacific Ocean: diversity, exploitation, threats and management actions. *French Ichthyological Society, Cybium*.

<https://doi.org/10.26028/cybium>

Nøttestad, L., Utne, K. R., Óskarsson, G. J., Jónsson, S. Þ., Jacobsen, J. A., Tangen, Ø., Anthonypillai, V., Aanes, S., Vølstad, J. H., Bernasconi, M., Debes, H., Smith, L., Sveinbjörnsson, S., Holst, J. C., Jansen, T., & Slotte, A. (2015). Quantifying changes in abundance, biomass, and spatial distribution of Northeast Atlantic mackerel (*Scomber scombrus*) in the Nordic seas from 2007 to 2014. *ICES Journal of Marine Science*, 73(2), 359–373. <https://doi.org/10.1093/icesjms/fsv218>